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APPLICATION FOR LETTERS PATENT

UNITED STATES OF AMERICA

Be it known that we, Robert C. **BATTERS** and Elaine **BATTERS**, of 4070 Stonewall Tell Road, College Park, Georgia 30349, citizens of the United States, have invented certain new and useful improvements in a

METHOD AND APPARATUS FOR PREVENTING BELT ABRASION

of which the following is a specification.

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METHOD AND APPARATUS FOR PREVENTING BELT ABRASION

CROSS-REFERENCE TO RELATED APPLICATION

This application claims the benefit of U.S. Provisional Patent Application Serial No. 60/333,271, filed November 14, 2001, the entirety of which is hereby incorporated by reference herein for all purposes.

TECHNICAL FIELD

The present invention relates generally to protective devices, protective clothing, and physical therapeutic methods and devices, and more particularly to a protective device and method for preventing or reducing abrasion and irritation caused by tool belts, duty belts, gun belts and the like.

BACKGROUND OF THE INVENTION

Police officers, iron workers, carpenters and others who must wear tool belts, duty belts, gun belts and the like (generally referred to herein as "work belts") are often bothered by abrasion and irritation over their hip bones, particularly over and around the crest of the ilium (the "iliac crest"). Often work belts are worn over the wearer's ordinary trouser belt, and for some wearers such as police officers, uniform requirements mandate that the work belt be worn directly over the trouser belt, sometimes aggravating the irritation. A method that is currently used to address this problem is the provision of suspenders on work belts or of shoulder-holsters for law enforcement officials. Because these solutions have their own inherent problems, most of the work force involved has adapted a tough-it-out attitude toward this chronic problem.

Thus it can be seen that needs exist for protective devices and methods that prevent or reduce the abrasion and/or irritation commonly caused by wearing a work belt. It is to the provision of improved methods and apparatus meeting these and other needs that the present invention is primarily directed.

SUMMARY OF THE INVENTION

In its various forms, the present invention provides improved protective devices and methods for preventing or reducing the abrasion and irritation commonly caused by wearing a work belt. Advantageously, the present invention is easily adapted to use with work belts including gun belts with holsters, tool belts, lumbar support belts for lifting, and the like. The protective devices of the present invention can be retrofit to a variety of existing work belts, or can be provided as a component of or an addition to new work belts.

Briefly described, in one aspect, the present invention is a system for protecting a wearer. The system preferably includes a garment to be worn adjacent a body portion of the wearer, and at least one protective device attached to the garment and having at least a portion thereof interposed between the garment and the wearer.

In another aspect, the present invention is a protective device for mounting to a belt, the protective device preferably including a loop defining an opening therethrough for receiving the belt.

In still another aspect, the present invention is a work belt. The work belt of the present invention preferably includes a belt to be worn around the waist of a wearer, the belt having a buckle end, a free end and a length. The work belt preferably also includes a first protective device mounted to the belt on a first side of a first positional point about 20-25% of the belt's length from one end of the belt, and a second protective device mounted to the belt on a second side of the first positional point opposite from the first protective device.

In yet another aspect, the present invention is a method of protecting a wearer from irritation by a work belt. The method of the present invention preferably includes installing a first padded loop of material on the work belt, securing the work belt about the wearer's waist, and positioning the first padded loop at a first position on the work belt adjacent the wearer's iliac crest.

The specific techniques and structures employed by the present invention to improve over the drawbacks of the prior systems and accomplish the advantages described herein will become apparent from the following detailed description of the embodiments of the invention and the appended drawings and claims.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of a wearer of a work belt being equipped with protective devices according to a preferred form of the present invention.

FIG. 2 is a perspective view of a protective device according to a preferred form of the present invention.

FIG. 3 is a cross-sectional view of the protective device of Fig. 2.

FIG. 4 shows two protective devices positioned overlying the crest of the ilium, according to a preferred form of the present invention.

DETAILED DESCRIPTION OF THE EMBODIMENTS

Referring now to the drawing figures, in which like reference numbers refer to like parts throughout, preferred forms of the present invention will now be described by way of example embodiments. It is to be understood that the embodiments described and depicted herein are only selected examples of the many and various forms that the present invention may take, and that these examples are not intended to be exhaustive or limiting of the claimed invention.

As seen best with reference to Fig. 1, in one preferred form, the present invention comprises a protective device 10 for installation on a belt of a wearer. The device 10 is preferably installed in the form of a loop around one or both of the trouser belt 12 of the wearer and/or a work belt 14 worn generally over or adjacent the trouser belt. For example, at least one, and more preferably two or more protective devices 10 are installed on the belt(s) of a wearer. A protective device 10 can be installed on one or both sides of a holster, handcuff carrier, or other items carried on the workbelt 14 and/or the trouser belt 12 to reduce discomfort

from abrasion by the carried item(s). The protective device 10 preferably is a separate component that is mounted onto or otherwise releasably attached to the belt(s). Alternatively, the protective device 10 is integrally formed with or otherwise permanently attached to either or both of the trouser belt 12 and/or the work belt 14. Although the protective device 10 is shown attached to a belt secured about the waist of a user, it will be understood that the device 10 can also be attached to other garments for use on other body portions of a wearer. For example, smaller forms of the device 10 can be attached to the strap of an ankle holster to protect the wearer's ankle region.

An example embodiment of the protective device 10 of the present invention is shown in greater detail in Figs. 2 and 3. The protective device 10 preferably comprises a padded strip of material 16 having first and second ends, first and second sides, and first and second faces. In an example embodiment, the strip 16 comprises a three-dimensional knit fabric such as a polyester fabric. The D3 three-dimensional knit spacer fabric MSHR715, produced by Gehring Textiles, Inc., Miltex Division, New York, NY has been found to be an acceptable material of construction. Optionally, the strip 16 is reinforced, as by one or more panel(s) of leather or other material (unshown) stitched, adhered, or otherwise attached to the strip of material 16.

The strip 16 of the protective device 10 preferably comprises a multi-layer construction for additional cushioning and greater user comfort. For example, as shown in Fig. 3, the material forming the protective device 10 is preferably folded upon itself one or more times to form two or more layers, or alternatively can be cut and stacked in multiple layers. The layers of construction of the strip 16 are preferably secured in place relative to one another by stitching 30, adhesive, or by other attachment means.

In one preferred form, the strip 16 of the protective device 10 is preferably about 1½" wide by about 6½" long. In alternate forms, the strip is wider or narrower, and/or longer or shorter. The length of the strip is preferably selected to define an opening having a size sufficient to accommodate the belt or belts

intended to be received therein when the strip is formed into a loop. For example, a protective device intended to be installed around both a trouser belt and a work belt will typically be longer than a device intended to be installed around only one belt, for example about 8" long, and in this manner can also serve as a beltkeeper to secure the work belt 14 in place relative to the trouser belt. Many police departments have uniform requirements specifying that an officer's gunbelt be positioned over the trouser belt for a neat uniform appearance. Securing a protective device 10 in place around both belts not only protects the wearer from abrasion, but also serves to secure the belts to one another in the desired positions.

The first end of the protective device 10 preferably comprises a hook portion 20 of a hook-and-loop fastener system, and the second end of the protective device preferably comprises a loop portion 22 of the hook-and-loop fastener system. Alternatively, interengaging snap couplings, a button and buttonhole, a hook and eyelet, or other releasable fasteners are provided at opposite ends of the strip 16 for coupling to one another to form the protective device 10, or the protective device is integrally formed as a continuous loop as by stitching or molding. The fastener means are preferably stitched, rivited, adhesively attached, integrally formed, or otherwise attached to the strip 16. Both interengaging elements of the fasteners can be attached on the same face of the strip 16 as shown in Fig. 2, or alternatively on opposite faces of the strip 16.

Most preferably, the protective device(s) 10 are installed in pairs around first and second portions of the belt(s), whereby a first device 10a lies over or adjacent one side an iliac crest 30 of the wearer and a second device 10b lies over or adjacent the other side of the iliac crest, as shown for example by Fig. 4. If desired, two pairs of protective devices 10a, 10b are installed on the belt(s) of a wearer, a first pair bracketing the wearer's left iliac crest, and the second pair bracketing the wearer's right iliac crest. For example, when the belt is worn, the wearer's left iliac crest may lie adjacent the belt about 20-25% of the belt's length from the buckle end of the belt (the belt's "length" excluding any portion of belt's free end that

extends through the buckle when fastened), and the right iliac crest may lie adjacent the belt about 75-80% of the belt's length from the buckle end. In this instance, one pair of protective devices may be attached to the belt at positions on either side of, and spaced about 1"-4" from, a point about 20-25% of the belt's length from the buckle end; and/or another pair of protective devices may be attached to the belt at positions on either side of, and spaced about 1"-4" from, a point about 75-80% of the belt's length from the buckle end. One or more protective device(s) 10 of the present invention may also be worn over the lumbar or abdominal region to relieve pressure in these areas. Provision of one or more protective devices 10 according to the present invention advantageously reduces or prevents irritation and/or abrasion of the wearer by his or her work belt. The device(s) preferably work to create a space between the wearer's skin and the work belt, and/or to provide a cushioning layer therebetween.

While the invention has been disclosed in preferred forms for illustration purposes, those skilled in the art will readily recognize that many modifications, additions, and deletions can be made therein without departing from the spirit and scope of the invention as set forth in the following claims.